

WHAT IS CLAIMED IS:

Sub A2

1. A device for spotwise imaging printing surfaces comprising:
 - a laser light source producing at least one laser beam movable relative to a printing surface, the laser beam defining an image spot on the printing surface, the laser beam having a laser power; and
 - a laser control varying the laser power or an exposure time as a function of a distance of the laser light source from the image spot.
2. The device as recited in claim 1 further comprising a distance meter for determining the distance of laser light source from the image spot.
3. The device as recited in claim 1 wherein the laser light source includes a diode laser.
4. The device as recited in claim 1 wherein the laser light source produces a plurality of laser beams spatially separated from one another for simultaneous imaging a plurality of printing spots.
5. The device as recited in claim 1 wherein the laser light source includes an individually controllable diode laser array.
6. A method for imaging printing surfaces using laser light comprising the steps of:
 - providing a laser light source for generating a laser beam having a position-dependent intensity distribution in two spatial directions perpendicular to a propagation axis, and a specific divergence;
 - providing a printing surface at a distance from the laser light source;
 - exposing the printing surface located at a certain distance from the laser light source;
 - and
 - varying a laser power or exposure time so as to vary a spot size of image spots on the printing surface.

7. The method as recited in claim 6 wherein the varying of the laser power or exposure time is a function of the distance of the laser light source from the image spot on the printing surface.

SUB B2

8. A method for generating printing spots of desired size comprising the steps of:

providing a laser light source for generating a laser beam having a position-dependent intensity distribution in two spatial directions perpendicular to a propagation axis, and a certain divergence;

providing a printing surface at a distance from the laser light source;
measuring the distance of the laser light source from the printing surface; and
adjusting the spot size to a predetermined value by varying a laser power or exposure time.

9. The method as recited in claim 8 wherein the varying of the laser power or exposure time is a function of the distance of the laser light source from an image spot on the printing surface.

SUB 3

10. A printing unit comprising:

a printing surface; and
a laser light source for spotwise imaging the printing surface, the laser light source producing at least one laser beam movable relative to the printing surface, the laser beam defining an image spot on the printing surface, the laser beam having a laser power, the device also including a laser control varying the laser power or an exposure time as a function of a distance of the laser light source from the image spot.

11. A printing machine comprising:

at least one printing unit, the printing unit including a printing surface; and a laser light source for spotwise imaging the printing surface, the laser light source producing at least one laser beam movable relative to the printing surface, the laser beam defining an image spot on the printing surface, the laser beam having a laser power, the device also including a laser control varying the laser power or an exposure time as a function of a distance of the laser

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light source from the image spot.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100